ROUND HONEYCOMB ROTOR

FIELD OF THE INVENTION

[0001] The objective of this invention is mainly to replace conventional propellers with a round honeycomb rotor which considerably improves its performance making it into an ideal rotor for all types of aircraft, motorized elevating pumps transporting liquids, mud, solids, granules, cereals or gases, as well as for outboard motors and all types of ships and vessels. It is also highly recommended in hydraulic or gas applications like ventilators, hoovers and compressors as it has helical pieces mounted between concentric tubular cylinders shaped as helical trapezoids and piled up one on top of the other giving it a final round honeycomb shape. The above mentioned concentric tubular cylinders completely shut down the outer perimeters of the overall round honeycomb and a tubular conical main piece is located as an extension of the largest outer diameter in order to control and orientate the centrifugal forces produced by helical pieces which are operating under extremely high revolutions. The main point of this invention is to replace propellers that are in general included in this kind of machinery with round honeycomb rotors.

BACKGROUND

[0002] The technique used in conventional propellers as in all types of aircraft consists of a nucleus moved by a highly revolutionized motor. Sophisticated revolving propellers and propellers with different shapes are inserted in the nucleus. All of them have outer perimeters completely open which implies that the majority of centrifugal forces produced by the propellers are wasted due to the high revolutions that are constantly operating on them. The technique used in elevating pumps decanting liquids is varied in the sense that the shape they acquire can be as varied as wanted, like runners with blades, circular disks with sails or bent projecting ribs with centrifugal functioning that in all cases make the best use of a small portion of the centrifugal

forces produced by its blades or sails or bent projecting ribs which are inserted in the nucleus or circular disks. Outer perimeters are completely open implying that a small portion of the centrifugal force applied on the framework is in fact used.

DESCRIPTION OF THE INVENTION

[0003] Round honeycomb rotor for rotors in general and outboard motors will have a conical main extension piece located on the tubular cylinder in order to concentrate and direct in one single direction centrifugal forces when liquids, mud or granules are on their way out. In the case of elevating pumps decanting liquids, mud and granules in general, it will be composed of a rotor nucleus in which helical pieces are located with tubular cylinders mounted on them giving it a round honeycomb shape. Tubular cylinders completely shut down the outer perimeters of helical pieces shaping helical tubular trapezoids. This explains why the majority of centrifugal forces are best used which is the main reason for this invention. This system allows the use of pumps extracting liquids and mud from a great depth as well as being used in the elevation of liquids and mud wherever they might be needed or decanting liquids, mud, granules, cereals and others to great distances, which requires the use of extremely high pressures. The round honeycomb rotor can also be used as a compressor depending the pressure on the helical progress as well as on the revolutions of the round honeycomb rotor. It can also be used as an extractor and ventilator being the progress of helical pieces determinant both for depth and height.

[0004] Round honeycomb rotors have other important applications added to the ones above mentioned such as driving jets for aircraft or high pressure jets for the extraction of minerals.

[0005] When the round honeycomb rotor is used as a propeller it will have a conical main piece in order to concentrate and orientate centrifugal forces on their way out having the same functional system as the pump for example when used as an extractor-ventilator,

compressor, propulsion gas or a propulsion mechanism for all types of vessels it will in all cases replace conventional blades.

[0006] The tubular helical trapezoids of the round honeycomb rotor as well as of the round honeycomb pump can have any geometrical shape. They can therefore be round, tubular, oval or polygons with three or more regular or irregular sides or could have any other known shape. This is applicable both to round honeycomb rotors for aircraft, round honeycomb pumps as well as to outboard rotors. The number of tubular cylinders could be one, two or more; the number of helical trapezoids would be multiplied by three or more according to the number of tubular cylinders of the round honeycomb rotors. On the one hand the surface of the helical pieces that with the tubular cylinders shape the round honeycomb, the sum of all the surfaces of helical pieces will be twice or more times the surface of the rotor frontal surface. On the other hand the round honeycomb rotor width will be 2% or more times wider that the maximum outer diameter of the concentric tubular cylinder.

[0007] Helical trapezoids with their own pieces make the overall round honeycomb rotor which can be mounted both with aligned pieces or out of line.

[0008] Helical pieces in round honeycomb rotors in general have two completely opposite functions: its helical shape and progress giving entrance to liquids and gases and in the case of a round honeycomb pump to solids and granules, represent the 50% of its performance. The other 50% of the helical piece in its inverse helical shape behaves like an extractor which under extremely high revolutions will produce a great pressure being very important for the good functioning of round honeycomb rotors in general, outboard motors and compressors.

[0009] Pumps and round honeycomb rotors will be able to spin in both directions by simply swapping the position of helical pieces around.

DESCRIPTION OF FIGURES

[0010] Figure 1 represents a round honeycomb rotor when used as an air propellant for aircraft with both frontal view and cross section. It includes the cube or nucleus (1), the first helical pieces are mounted on the nucleus outer diameter (1) which is also the diameter of the first cylinder (2) followed with the next set of concentric tubular cylinders (2) and helical pieces placed between them (3) (twelve, nine or six are represented in the figure starting with ones having the largest diameter and alternating helical pieces from one diameter to another whenever possible). The outer cylinder with largest diameter has a conical tubular main extension (4) and finally close ups "C", "D" and "E" showing the union between pieces and the different diameters of tubular cylinders.

[0011] Figure 2 shows tubular cylinders in progress (2) with helical pieces in progress (3) having 12, 9 and 6 elements respectively and shaping the helical tubular trapezoids where spotheight A represents the 50% of progress giving entrance to gases or solids in round honeycomb pumps, while spotheight B represents the other 50% when used as an extractor due to its reverse helical shape. Arrows "R" point out the direction of gases with the spinning movement represented by "P" and close ups "F", "G" and "H" facilitating an enlarged view of helical pieces.

[0012] Figure 3 represents half progress for previous figures interposing from largest to lowest progress in 2/3 of its width, showing cylinders in progress (2) and helical pieces (3).

[0013] Figure 4 represents a front view and cross section (1) of a rotor when used as an outboard motor; we can see the cube with its corresponding motor, the tubular cylinder (2) where four helical pieces are fitted (3) followed with a tubular conical main extension (4). We can also appreciate in this drawing both the tubular cylinder and its helical pieces in progress, where arrows "I" shows the entrance way of liquid when the spinning direction is "J".

[0014] An enlarged close up of the entrance of helical pieces is represented with the letter "K".

[0015] Figure 5 represents a cross section of a rotor when used as an extractor pump with its own accessories such as fitted axle with incorporated bearing and exit framework. We can also see a front view of the rotor and the tubular cylinder in progress being "L" the direction of the entrance of liquid and "M" the spinning direction, as well as helical pieces (3), the rotor's cube (1) and the tubular cylinder (2). Close up "N" shows an enlargement of helical pieces (3).

DESCRIPTION OF A PREFERENTIAL PERFORMANCE

[0016] It is viable to describe a preferential performance of a round honeycomb rotor for at least three of its possible applications. Firstly as a rotor for all types of aircraft, it is composed of a nucleus or cube (1) acting as the centre of the rotor, two or more tubular cylinders are concentrically mounted (2) where in between them helical pieces are fitted (3) therefore shaping helical tubular trapezoids like a round honeycomb. The outer cylinder with largest diameter will be extended by fitting a tubular conical main piece (4). These rotors will have varied sizes according to the needed power. This set of pieces will be metallic in most cases and can be assembled following the traditional way for example by welding, riveting or screwed.

[0017] Regarding rotors for outboard motors, pumps and extractors, cast iron, highly resistant light alloys or sheathed plastics could be suitable materials as these rotors generally come in smaller sizes.

[0018] The cube or nucleus (1) will have a fitted motor according to its own characteristics.

[0019] Now that this invention patent has been extensively described and presented in order to allow the launch of its exploitation, it is declared brand new and of my own invention warning that its incidental details such as shape, size, materials and manufacture procedures can in fact be altered according to the information contained in the following paragraph of this report.